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10/663,174	09/15/2003	John Santhoff	30287-111	2822
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PULSE-LINK, INC. 1969 KELLOGG AVENUE CARLSBAD, CA 92008			JAGANNATHAN, MELANIE	
			ART UNIT	PAPER NUMBER
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DATE MAILED: 02/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/663,174	Applicant(s) SANTHOFF ET AL.	
	Examiner Melanie Jagannathan	Art Unit 2666	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 12 December 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 11-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 11-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

- A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/12/2005 has been entered.
- Claims 11-28 are pending.

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 11-15 are rejected under 35 U.S.C. 102(e) as being anticipated by Webster et al. US 6,754,195.

Regarding claim 11, the claimed first transceiver structured to communicate at a first data rate is disclosed by mixed signal device (Figure 1,

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elements 103-109) containing a transmitter (Figure 16) and a single carrier receiver (Figure 2, element 207). The claimed second transceiver structured to communicate at a second data rate is disclosed by same mixed signal device (Figure 1, elements 103-109) containing a transmitter (Figure 16) and multi-carrier receiver (Figure 2, element 207). The mixed signal devices (elements 103, 105) communicate with each other at different or higher data rates than 802.11b rates and can also be configured with a standard mode to be able to communicate with devices (elements 107, 109) at any one or more of the standard 802.11b rates. See column 5, lines 49-67, column 6, lines 1-40, column 9, lines 20-58. Each mixed signal device (elements 103, 105) contains a transmitter (Figure 16) and a single carrier receiver (element 207) for analyzing preamble of incoming signal and processing incoming signal that is not a mixed mode packet and also contains a multi-carrier receiver (element 209) for processing incoming mixed mode packet. A mixed mode packet has a header with mixed mode identifier and accommodates communication between the different mixed signal mode devices (elements 103-109) at different or higher data rates. See column 6, lines 44-67, column 7, lines 1-22.

Regarding claims 12-13, the claimed first data rate between about 1 Kbps to 5Mbps and second data rate is between 5Mbps to about 1Gbps is disclosed by Barker preamble (Figure 3, element 303) transmitted at 1 Mbps, a Barker header (element 305) transmitted at 1 or 2 Mbps and OFDM symbols (Figure 3, element 307) incorporating payload data transmitted at any selected data rate from among rates of 24, 36, 48, or 54 Mbps. See column 7, lines 23-32.

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Regarding claims 14-15, the claimed first transceiver communicates at first data rate and second transceiver kept off until desired is disclosed by the mixed signal device includes single-carrier receiver (Figure 2, element 207) and multi-carrier receiver (Figure 2, element 209) where switch (element 205) initially provides received signal to single-carrier receiver until if header examination determines it is a mixed packet (as described above) the switch provides it to the multi-carrier receiver. See column 6, lines 44-67, column 9, lines 20-58.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 16-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Webster et al in view of Wynbeek US 6,853,835.

Regarding claims 16, 19, the claimed at least two communication devices, each device structured to transmit and receive using at least two data rates is disclosed by mixed signal devices (Figure 1, elements 103-109), operating in 2.4 GHz band, communicating with each other at different or higher data rates from each other. Mixed signal devices (elements 103, 105) who communicate with each other at different or higher data rates than 802.11b rates can be configured with a standard mode to be able to communicate with devices (elements 107, 109) at any one or more of the standard 802.11b rates. See column 5, lines 49-67, column 6, lines 1-15, column 9, lines 20-58. The claimed first transceiver structured to communicate at a first data rate is disclosed by mixed signal device (Figure 1, elements 103-109) containing a transmitter (Figure 16) and a single carrier receiver (Figure 2, element 207). The claimed second transceiver structured to communicate at a second data rate is disclosed by same mixed signal device (Figure 1, elements 103-109) containing a transmitter (Figure 16) and multi-carrier receiver (Figure 2, element 207). Each mixed signal device (elements 103, 105) contains a transmitter (Figure 16) and a single carrier receiver (element 207) for analyzing preamble of incoming signal and processing incoming signal that is not a mixed mode packet and also contains a multi-carrier receiver (element 209) for processing incoming mixed mode packet.

Webster does not disclose the claimed at least two ultra-wideband devices, a master ultra-wideband transceiver to communicate with the at least two ultra-wideband devices and the two ultra-wideband devices transmit a plurality of pulses. Wynbeek discloses a wireless communication system with a base station (Figure 2, element 203) containing a carrier wave-based transmitter (element 207) and ultra-wideband receiver (element 208) and a mobile device (element 220) with a carrier wave-based receiver (element 223) and ultra-wideband transmitter (element 228). The mobile and base stations communicate using a train of wideband pulses. Examiner interprets the base station as the master ultra-wideband transceiver. See column 2, lines 49-56, lines 63-67, column 3, lines 1-7.

At the time the invention was made it would have been obvious to modify the mixed signal devices with first and second transceivers of Webster with the ultra wideband transmitter and receiver of the devices in Wynbeek. One of ordinary skill in the art would be motivated to do this since ultra-wideband communication employs a very low transmission power level and thus is highly resistant to jamming and interception. See column 3, lines 8-18, lines 28-33.

Regarding claim 17, Webster et al. discloses devices communicating with each other at rates of 1, 2, 5.5, 11 Mbps. See column 6, lines 1-8. Additionally, Webster discloses in mixed mode packet a Barker preamble (Figure 3, element 303) transmitted at 1 Mbps, a Barker header (element 305) transmitted at 1 or 2 Mbps and OFDM symbols (Figure 3, element 307) incorporating payload data transmitted at any selected data rate from among rates of 24, 36, 48, or 54 Mbps.

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See column 7, lines 23-32. Webster does not disclose the claimed each of the two data rates are selected from group consisting of 1 Kbps, 5Mbps, 25 Mbps, 50 Mbps, 100 Mbps, 200 Mbps, 400 Mbps, 480 Mbps, 500 Mbps, 1 Gbps. At the time the invention was made it would have been obvious to modify the rates of Webster to be rates disclosed above. One of ordinary skill in the art would be motivated to do this allow for different and higher data rates to be communicated between devices in wireless local area networks.

Regarding claims 18, 27, Webster discloses the claimed determining a communication data rate capability of devices, device transmit request to communicate using only one of data rates is disclosed by Webster et al. incorporating by reference dual packet configuration of U.S. patent application 09/586,571. The dual mode packet configuration allows 802.11b in 2.4 GHz band to coexist with devices communicating at different or greater rates afforded by OFDM. An OFDM mode bit in the header is used by target device for indication of OFDM mode use by another device. See column 1, lines 52-64.

Webster does not disclose the master ultra wideband transceiver. Wynbeek discloses a wireless communication system with a base station (Figure 2, element 203) containing a carrier wave-based transmitter (element 207) and ultra-wideband receiver (element 208) and a mobile device (element 220) with a carrier wave-based receiver (element 223) and ultra-wideband transmitter (element 228). The mobile and base stations communicate using a train of wideband pulses. Examiner interprets the base station as the master ultra-



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wideband transceiver. See column 2, lines 49-56, lines 63-67, column 3, lines 1-7.

At the time the invention was made it would have been obvious to modify the mixed signal devices with first and second transceivers of Webster with the ultra wideband transmitter and receiver of the devices in Wynbeek. One of ordinary skill in the art would be motivated to do this since ultra-wideband communication employs a very low transmission power level and thus is highly resistant to jamming and interception. See column 3, lines 8-18, lines 28-33.

Regarding claim 20, Webster et al. discloses all of the limitations except for the claimed time duration may range from about ten picoseconds to about one millisecond. Wynbeek discloses ultra-wideband transmission employs a large plurality of pulses of small amplitude, precisely timed and are one cycle in duration. The pulses are spread over about 1 to about 3 Gigahertz of bandwidth. The inverse of the frequency yields a period satisfying the claimed range of ten picoseconds to about 1 millisecond. See column 2, lines 63-67, column 3, lines 1-7, lines 44-47. At the time the invention was made it would have been obvious to modify the mixed signal devices with first and second transceivers of Webster with the ultra-wideband communication and ultra wideband transmitter and receiver of the devices in Wynbeek. One of ordinary skill in the art would be motivated to do this since ultra-wideband communication employs a very low transmission power level and thus is highly resistant to jamming and interception. See column 3, lines 8-18, lines 28-33.

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Regarding claim 21, Webster et al. discloses the claimed OFDM signals is disclosed by devices transmitting OFDM symbols (Figure 3, element 307) incorporating payload data transmitted at any selected data rate from among rates of 24, 36, 48, or 54 Mbps. See column 7, lines 23-32.

Webster does not disclose the claimed at least two ultra-wideband devices. Wynbeek discloses a wireless communication system with a base station (Figure 2, element 203) containing a carrier wave-based transmitter (element 207) and ultra-wideband receiver (element 208) and a mobile device (element 220) with a carrier wave-based receiver (element 223) and ultra-wideband transmitter (element 228). The mobile and base station communicate using a train of wideband pulses. See column 2, lines 49-56, lines 63-67, column 3, lines 1-7.

At the time the invention was made it would have been obvious to modify the mixed signal devices with first and second transceivers of Webster with the ultra wideband transmitter and receiver of the devices in Wynbeek. One of ordinary skill in the art would be motivated to do this since ultra-wideband communication employs a very low transmission power level and thus is highly resistant to jamming and interception. See column 3, lines 8-18, lines 28-33.

Regarding claim 22, Webster discloses the claimed low data rate transceiver and high data rate transceiver is disclosed by each mixed signal device (Figure 1, elements 103-109) includes a transmitter (Figure 16) and a single-carrier receiver (Figure 2, element 207) and multi-carrier receiver (Figure 2, element 209) where switch (element 205) initially provides received signal to

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single-carrier receiver and if header examination determines it is a mixed packet incorporating higher rate (as described above) the switch provides it to the multi-carrier receiver. Examiner interprets low data rate transceiver as transmitter and single carrier receiver and high data rate transceiver as transmitter and multi-carrier receiver. See column 6, lines 44-67, column 9, lines 20-58.

Webster does not disclose the claimed at least two ultra-wideband devices. Wynbeek discloses a wireless communication system with a base station (Figure 2, element 203) containing a carrier wave-based transmitter (element 207) and ultra-wideband receiver (element 208) and a mobile device (element 220) with a carrier wave-based receiver (element 223) and ultra-wideband transmitter (element 228). The mobile and base station communicate using a train of wideband pulses. See column 2, lines 49-56, lines 63-67, column 3, lines 1-7.

At the time the invention was made it would have been obvious to modify the mixed signal devices with first and second transceivers of Webster with the ultra wideband transmitter and receiver of the devices in Wynbeek. One of ordinary skill in the art would be motivated to do this since ultra-wideband communication employs a very low transmission power level and thus is highly resistant to jamming and interception. See column 3, lines 8-18, lines 28-33.

Regarding claims 23-24, the claimed wideband device comprising a first transceiver structured to communicate at a first data rate is disclosed by mixed signal device (Figure 1, elements 103-109) containing a transmitter (Figure 16) and a single carrier receiver (Figure 2, element 207). The claimed second

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transceiver structured to communicate at a second data rate is disclosed by same mixed signal device (Figure 1, elements 103-109) containing a transmitter (Figure 16) and multi-carrier receiver (Figure 2, element 207). The mixed signal devices (elements 103, 105) communicate with each other at different or higher data rates than 802.11b rates and can also be configured with a standard mode to be able to communicate with devices (elements 107, 109) at any one or more of the standard 802.11b rates. See column 5, lines 49-67, column 6, lines 1-40, column 9, lines 20-58. The claimed determining a communication data rate capability of devices, device transmit request to communicate using only one of data rates is disclosed by Webster et al. incorporating by reference dual packet configuration of U.S. patent application 09/586,571. The dual mode packet configuration allows 802.11b in 2.4 GHz band to coexist with devices communicating at different or greater rates afforded by OFDM. An OFDM mode bit in the header is used by target device for indication of OFDM mode use by another device. See column 1, lines 52-64.

Webster does not disclose the claimed at least two ultra-wideband devices, a master ultra-wideband transceiver to communicate with the at least two ultra-wideband devices. Wynbeek discloses a wireless communication system with a base station (Figure 2, element 203) containing a carrier wave-based transmitter (element 207) and ultra-wideband receiver (element 208) and a mobile device (element 220) with a carrier wave-based receiver (element 223) and ultra-wideband transmitter (element 228). The mobile and base station communicate using a train of wideband pulses. Examiner interprets the base

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station as the master ultra-wideband transceiver. See column 2, lines 49-56, lines 63-67, column 3, lines 1-7.

At the time the invention was made it would have been obvious to modify the mixed signal devices with first and second transceivers of Webster with the ultra wideband transmitter and receiver of the devices in Wynbeek. One of ordinary skill in the art would be motivated to do this since ultra-wideband communication employs a very low transmission power level and thus is highly resistant to jamming and interception. See column 3, lines 8-18, lines 28-33.

Regarding claim 25, Webster discloses the claimed transmitting a beacon signal containing geographic location information by mixed packet signal including preamble with power and timing information associated with the multi-path medium which the signal was propagated from the WLAN device. See column 6, lines 44-55, column 7, lines 10-22.

Webster does not disclose the claimed master ultra-wideband transceiver. Wynbeek discloses a wireless communication system with a base station (Figure 2, element 203) containing a carrier wave-based transmitter (element 207) and ultra-wideband receiver (element 208) and a mobile device (element 220) with a carrier wave-based receiver (element 223) and ultra-wideband transmitter (element 228). The mobile and base station communicate using a train of wideband pulses. Examiner interprets the base station as the master ultra-wideband transceiver. See column 2, lines 49-56, lines 63-67, column 3, lines 1-7.

At the time the invention was made it would have been obvious to modify the mixed signal devices with first and second transceivers of Webster with the ultra wideband transmitter and receiver of the devices in Wynbeek. One of ordinary skill in the art would be motivated to do this since ultra-wideband communication employs a very low transmission power level and thus is highly resistant to jamming and interception. See column 3, lines 8-18, lines 28-33.

Regarding claim 26, Webster et al. discloses devices communicating with each other at rates of 1, 2, 5.5, 11 Mbps. See column 6, lines 1-8. Additionally, Webster discloses in mixed mode packet a Barker preamble (Figure 3, element 303) transmitted at 1 Mbps, a Barker header (element 305) transmitted at 1 or 2 Mbps and OFDM symbols (Figure 3, element 307) incorporating payload data transmitted at any selected data rate from among rates of 24, 36, 48, or 54 Mbps. See column 7, lines 23-32. Webster does not disclose the claimed each of the two data rates are selected from group consisting of 1 Kbps, 5Mbps, 25 Mbps, 50 Mbps, 100 Mbps, 200 Mbps, 400 Mbps, 480 Mbps, 500 Mbps, 1 Gbps. At the time the invention was made it would have been obvious to modify the rates of Webster to be rates disclosed above. One of ordinary skill in the art would be motivated to do this allow for different and higher data rates to be communicated between devices in wireless local area networks.

Regarding claim 28, Webster et al. discloses all of the limitations of the claim except for master ultra-wideband transceiver transmitting shut-down signal to ultra-wideband device. Wynbeek discloses a wireless communication system with a base station (Figure 2, element 203) containing a carrier wave-based

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transmitter (element 207) and ultra-wideband receiver (element 208) and a mobile device (element 220) with a carrier wave-based receiver (element 223) and ultra-wideband transmitter (element 228). The mobile and base station communicate using a train of wideband pulses. Examiner interprets the base station as the master ultra-wideband transceiver. See column 2, lines 49-56, lines 63-67, column 3, lines 1-7.

At the time the invention was made it would have been obvious to modify the mixed signal devices with first and second transceivers of Webster with the ultra wideband transmitter and receiver of the devices in Wynbeek and to have master ultra-wideband transceiver to transmit a shut-down signal to ultra-wideband device. One of ordinary skill in the art would be motivated to do this since ultra-wideband communication employs a very low transmission power level and thus is highly resistant to jamming and interception and transmitting shut-down signal would conserve battery power of device. See column 3, lines 8-18, lines 28-33, 64-67, column 4, lines 15-21.

### ***Response to Arguments***

5. Applicant's arguments with respect to claims 11-28 have been considered but are moot in view of the new ground(s) of rejection. Examiner appreciates detailed description of prior art.

Applicant argues Webster et al. does not disclose a communication device comprising a first transceiver to communicate at first data rate and second transceiver to communicate at second data rate.

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Examiner respectfully disagrees. Webster et al. discloses each mixed signal device (elements 103, 105) contains a transmitter (Figure 16) and a single carrier receiver (element 207) for analyzing preamble of incoming signal and processing incoming signal and also contains a multi-carrier receiver (element 209) for processing incoming mixed mode packet. Examiner interprets first transceiver as combination in the one device of transmitter and single carrier receiver. Examiner interprets second transceiver as combination in same device of transmitter and multi-carrier receiver.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melanie Jagannathan whose telephone number is 571-272-3163. The examiner can normally be reached on Monday-Friday from 8:00 a.m.-4:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on 571-272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MJW  
2/6/06



DANG TON  
PRIMARY EXAMINER